Made in Sweden by STEELTECH

iPinium®

Thawing cabinet Tina 1200RM

Service manual

EN

CE

DOC.NO STO 4764-02
EDITION 2 2015.10

Contents	Page

STEELTECH

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General instructions

If the instructions in this and other documentation for the equipment are not followed, it could endanger safety and void the supplier's guarantee and liability for the product.

- Read the instructions in this document carefully, since they contain important safety information about installation, operating reliability, use and maintenance of the product. Keep these documents so that they are available to relevant users.
- Installation and testing must be carried out by technicians who are trained for such work, and in accordance with the manufacturer's instructions.
- The product must be installed and connected to the necessary services in accordance with the relevant standards and directives.
- All servicing, maintenance and repairs must be carried out by technicians who are trained for such work. Use only original spare parts. See the Spare parts catalogue*.
- This product may only be operated and maintained by trained personnel (operators).

* Not supplied. May be ordered from the manufacturer or manufacturer's representative.

CE directives

Tina 1200RM is manufactured in accordance with the directives, LVD2006/95/EG, EMC 2004/108/EG and is CE marked.

Safety instructions

- Switch off the power before attempting to rectify faults or operating problems with the thawing cabinet.
  - Set the selector switch in the 0 position. (See Operating Instructions)
  – Switch off the Main circuit breaker (NOT found on the thawing cabinet).

Note!

In case of welding on the Thawing cabinet, disconnect the electronic device by using the connection blocks marked (X10- X16) on the PCB (see the picture). See Fig. 1
Be cautious when re-connecting the electronic device after welding job and control all connections before re-starting the Tina thawing cabinet.

Warning! Electricity!

Warning sign indicates the thawing cabinet's electrical enclosure. The door of the electrical enclosure and other cover panels may only be opened by technicians who are trained for such work.

Warning!

- The outside of the thawing cabinet should not be rinsed.
- If water comes into contact with live components it could be fatal. Always take care when cleaning, especially when close to electrical components.
- Use a damp cloth for cleaning.

Warning!

Note that the interior surfaces of the thawing cabinet can become hot during the cleaning program and cause burns if touched.
Also take care when the cabinet door is opened. Heat escapes and can cause personal injury.

Technical data

Rating plate

The product number for the thawing cabinet can be found on the rating plate, which is placed on the bottom left-hand side of the thawing cabinet and on the rear of the electrical enclosure, as well as on the EU declaration of conformity supplied with the machine on delivery.
Noise level: <70dB
Enclosure class: IP44

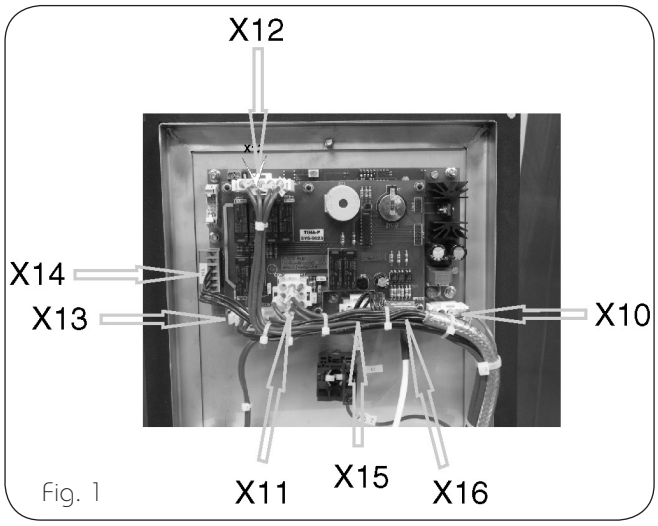


Fig. 1

Component placement Tina 1200 RM (Fig. 2)

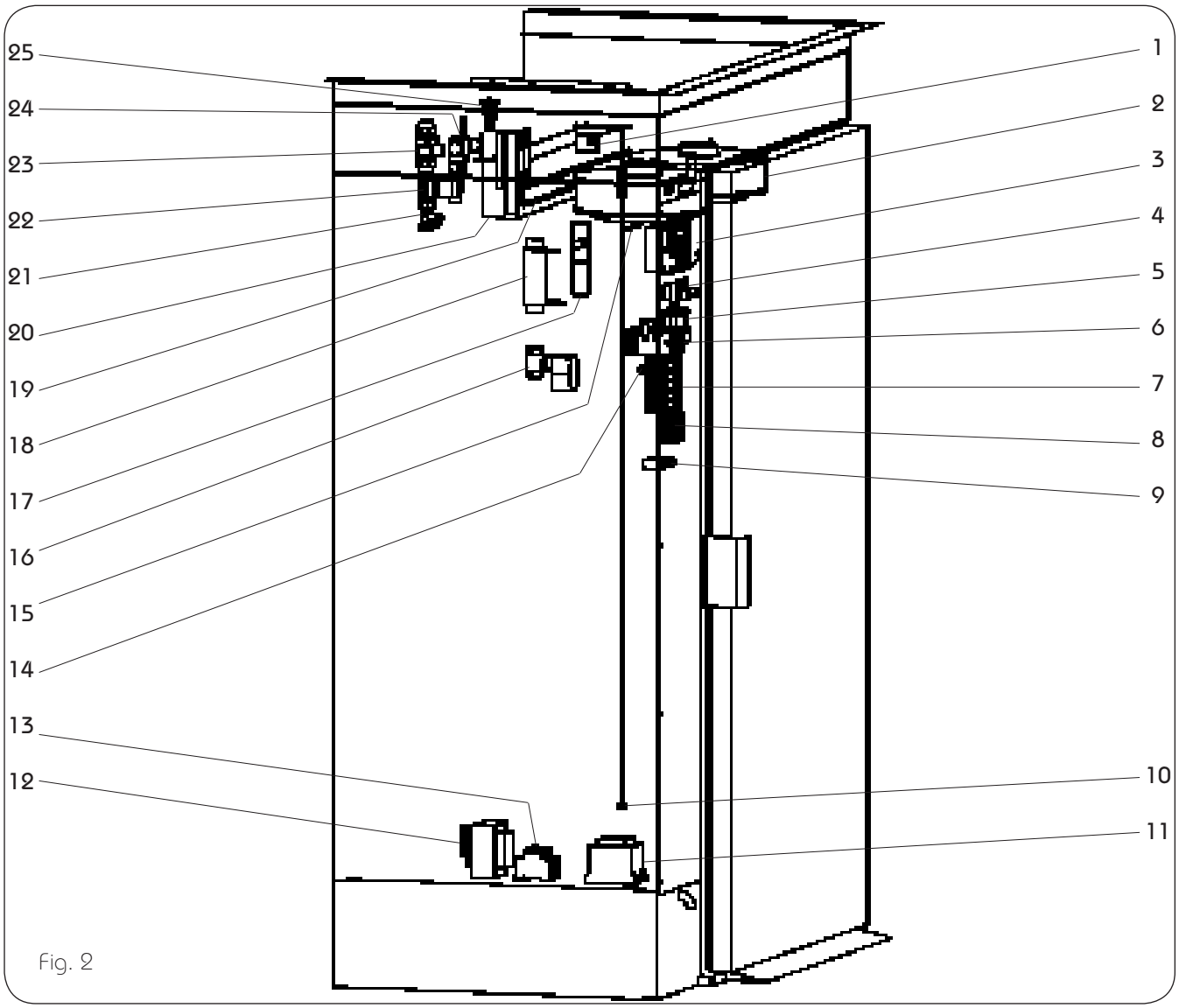


Fig. 2

1. Overheating protection
2. Fan
3. Control PCB
4. Key switch
5. Fuse
6. Speed control
7. Contactor
8. Terminal block
9. Capacitor
10. Food probe
11. Transformer, electronic
12. Transformer, 440V-230V
13. Automatic fuse
14. Support contactor
15. Temperature sensor
16. Powered ball valve
17. Glass level gauge
18. Tube heater
19. Air heating element
20. Evaporator
21. Radiator coupling
22. Magnet valve
23. Back flow priventor
24. Solenoid valve
25. Expansion valve

Replacing the air heating element (Fig. 3)

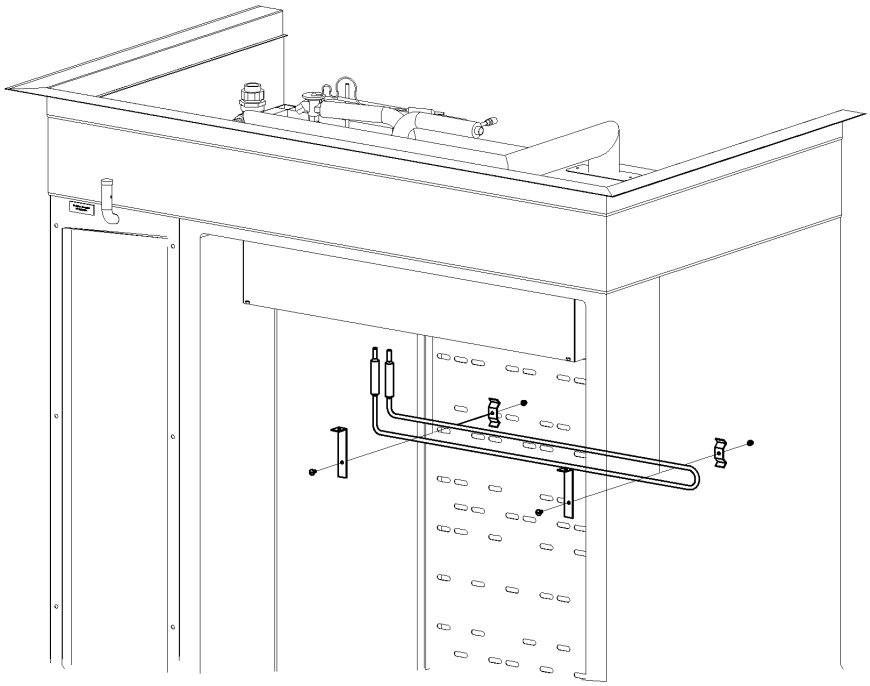


Fig. 3

Loosen the electrical cabinet door and place to the side of the opening. Disconnect the element cables at connection X3, position 4 and 6. (cable nr 28 and 29) Loosen the cable from the harness. Open the cabinet door and lift out the bottom guide and air distributor plate. Fold down the cover. Unscrew the air element from its mounting and pull it down through the top. Fit the new air element in the reverse order.

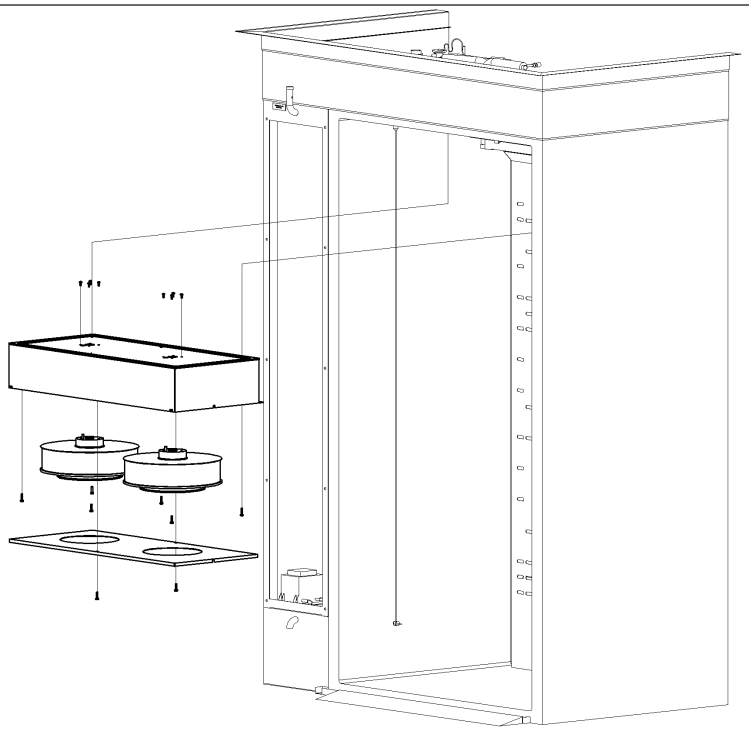


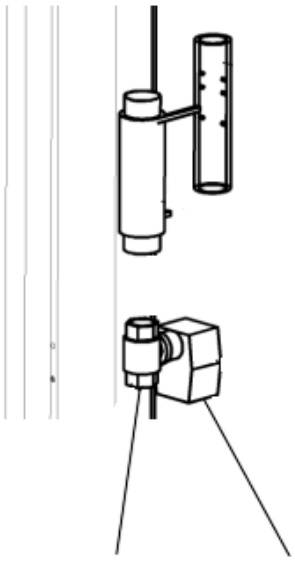
Fig. 4

Replacing the fan (Fig.4)

Loosen the electrical cabinet door and place to the side of the opening. Disconnect the fan cables at connection X3, position 7 to 14. Loosen the cables from the harness. Open the cabinet door and lift out the bottom guide and air distributor plate. Fold down the cover. Unscrew and move the cavity probe and overheating protection fitted to the underside of the fan cover to one side. Remove the fan cover. Dismantle the complete fan enclosure by unscrewing the 6 screws in the top and then carefully lift it out, without damaging the cables. (This should be done with the help of a colleague due to the weight of the fan enclosure.) Replace the faulty fan by removing the screws on the top of the fan enclosure. Replace seal if damaged. Assemble in the reverse order.

Function description of the Powered ball valve (drain valve)

The powered ball valve opens and closes automatically every time the thawing cabinet starts or using the desinfection/cleaning program. The process takes approximately 2.5 minutes



Ball valve Drive unit

Fig. 5

Replacement of the Powered ball valve (drain valve) Fig. 5

The Powered ball valve is delivered always complete with both drive unit and ball valve. In case of function failure delime first, if the function disorder still remains replace the drive unite first (marked in the electrical wiring diagram as M4).

- Dismantle the electrical connection of the valve.
- Separate the drive unit and the ball valve by using the screw in the side of the valve.
- Replace the drive unit.

Replacing the PCB board:

After replacing the PCB board be sure that right size Tina thowing cabinet is choosen.
See Calibration page 13.
Change the battery: Lift the back stop bar over the battery and changeto:
Type: CR 2032
3V

Minus pole twards the PCB.

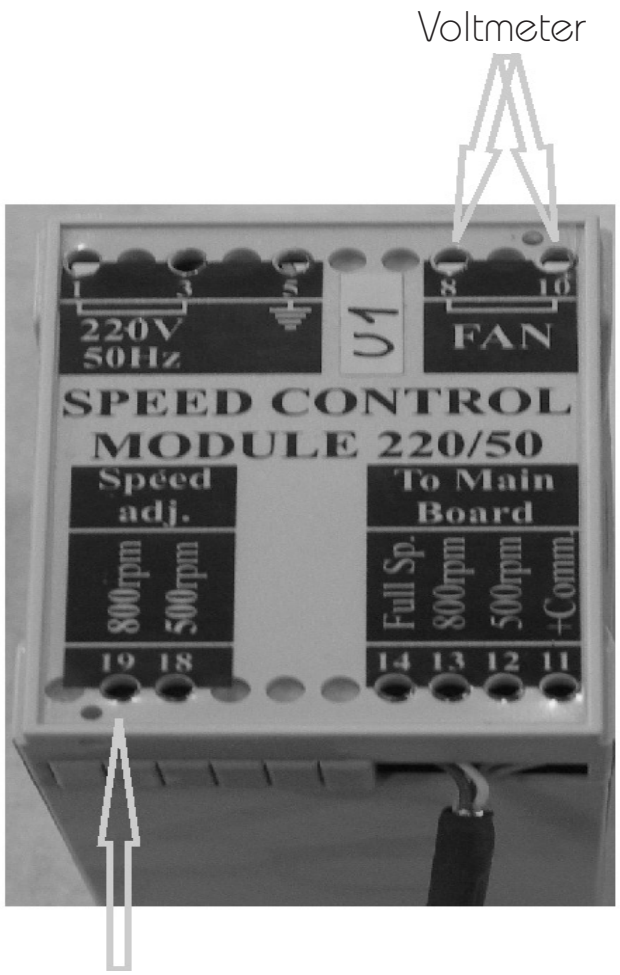


Fig. 6

Replacing the speed controll unit (U1) Fig. 6

. In case of replacing the speed control unit itis neccessary to adjust the fan speed.
. Connect a Voltmeter to connection marked FAN Points 8 and 10
. Adjust the voltage by using the adjustment screw in connection marked Speed adj. poit 19 (800rpm) as in the table below.
. Measure the fan speed if there are instrument avalable as shown in the table below.

Low speed: 750-850 rpm

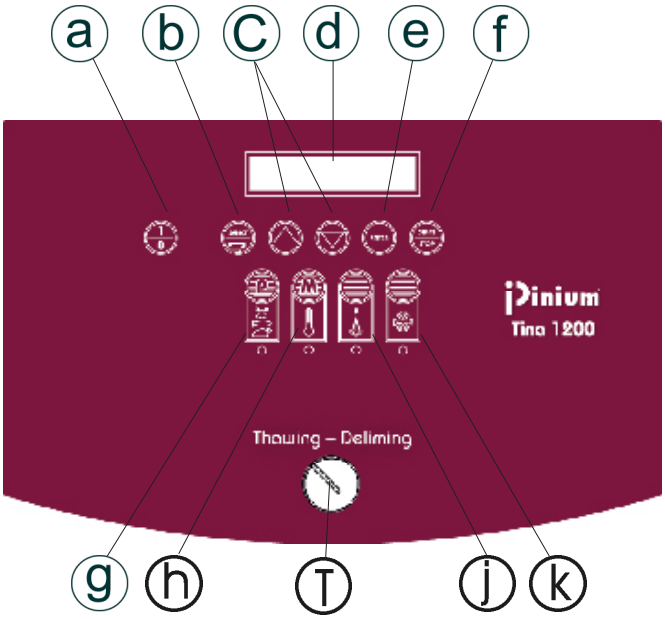
High speed: 1300-1400 rpm

Model	Connection Voltage	Adjusting Voltage
Tina1200RM	400 3 ~50	124V
	400/440 3 ~60	140V

Basic adjustment of the radiator coupling

Loosen the prtecting cap on the adjusting screw. Close the adjusting valve completely.Open the valve extremely little. The flow have to be 1 l/min. Re-assamble the protecting cap.

Control panel



a ON/OFF
b Select/ (HACCP) printing
c Increase/decrease value
d Display
e Confirm
f Start/Stop of process
g Standard (Pre-set) thawing programs
h Manual thawing program
j Bactericidal/cleaning mode
k Refrigeration mode
T Thawing/deliming key

g
Standard (Pre-set) thawing programs

h
Manual thawing program

j
Cleaning/Bactericidal mode

k
Refrigeration mode

Fig. 7

Technical data

Model	Volume ltrs	Max. weight of defrosting food	Capacity baskets/containers	Door hung	Voltage	Loading kW	Cooling kcapacity kW	Fuse A	Weight kgs net	Weight kgs gross	Note
Tina1200RM	1200	200 kg	13 GN 2/1	right	400 3 ~50	4	1,5	10	295	310	
				left							
				right	440 3 ~60			10			
				left							

Functional specification Tina 1200RM

Thawing

1. Start up

- Push the **Start/Stop (f)** to start the thawing process. (See even the Hand book)
- Fan no.1 starts.
- Steam generator is emptied and refilled.
- The probe detects that the frozen products have a temperature below set target temperature (0-1°C). The thawing process starts.
- Fan no.2 starts.
- The frozen products lower the temperature in the cabinet.

2. Heating up phase

- As the cabinet temperature is decreased below 7°C the steam generator starts.
- After 5 minutes the extra heating element is also energized.
- As the probe has been detecting a temperature below set target temperature for a period of 10 minutes the cabinet temperature is increased to 15°C by the steam generator.
- After 5 minutes the heating element is energized.
- The cabinet then maintains 15°C mainly by using the steam generator. (The heating element operates with a 5 min. delay)
- When the frozen products reaches target temperature minus 3°C, the cabinet temperature is limited to 7°C.
- If the cabinet temperature stays over 7 or 15°C for more than 5minutes, the refrigiration system will lower the cabinet temperature.
- The product surface temperature then increases to set target temperature (0-1°C).

3. Temperature equalization phase

- As the probe detects set target temperature the steam generator, the heating element and fan no.2 is shut of.
- The products surface temperature then lowers, as the product core is still cold. As the probe detects a temperature below the target temperature the heating up phase re-starts from step 2.
- If the probe has not detected a temperature below set target temperature for 5 minutes the cooling system starts and lowers the cabinet temperature to 2°C.

4. Cold storage

- Step 2 and 3 is automatically repeated several times until the probe detects that the surface temperature has stabilized on the target temperature.
- The cabinet then keeps a temperature of 2°C.
- Remaining ice crystals in the core of the product is now slowly thawed without affecting the surface temperature. (Temp.difference between core and surface of product <2°C)
- The steam generator is energized for 4 minutes every 40minutes, this to prevent dry out of the food.
- The heating element is energized for 3 minutes every 30min, this to reduce ice on the evaporator.
- As this heating element is on the cooling system and the steam generator is automatically switched off.

5. Thawing ready.

Cleaning program

- Push button (j),  and then the **Start/Stop (f)** to start the cleaning process

- Steam generator is emptied and refilled.
- The fans starts.
- The steam generator and the heating element heat the cabinet to 80°C and maintain it for 5 minutes.
- Steam generator, element and fans are then shut of and the cleaning phase is done.

PARAMETER SET-UP

1. Off state

The following text appears in the display:

Alternatives from Off state:

1.1 Ready state:

Push **ON/OFF (a)** .

1.2 cycle parameters program:

1.3 Preset program:

1.4 Initiate internal/customer parameter:

Push **Start/Stop (f)** in 5 seconds.

1.5 Calibration program:

Push **Scroll (g)** button and **Scroll (g)** button . in 5 seconds.

1.6 Loading default values of cycle parameters:

Push **Scroll (g)** button in 10 seconds.

1.7 Print events memory:

Push **Select (b)** button in.

1.8 Clear events memory:

Push **Scroll (g)** button in 10 seconds.

NOTE: The Tina thawing cabinet will return back to "OFF STATE" if no buttom pushes in more than 5 minutes.

NOTE: It is possible to regret any buttom pushing by pushing the **Start/Stop (f)** buttom.

1.2 Cycle parameters program:

This function is reserved for the factory settings only.

1.3 Preset program:

This function is reserved for the factory settings only.

1.4 Initiate internal/customer parameter:

1.4.1 Choice of language

NOTE! The factory setting is English.

Available languages are:

Deutsch (German)
English
Español (Spanish)
Française (French)
Italiano (Italian)
Svenska (Swedish)

The following text appears in the display:

Push **Start/Stop (f)** in 5 seconds

The following text appears in the display:

To choose language use **scroll (g)** button or .

Push **Enter (e)** button to confirm the selection.

The following text appears in the display:

The following text appears in the display:

A buzzer confirms the changes.

Push **Start/Stop (f)** .

The following text appears in the display:

Choose alternative by using **scroll (g)** button or .

Push **Enter (e)** button to confirm the selection.

The following text appears in the display:

1.4.2 Initiate internal/customer parameter:

The following text appears in the display:

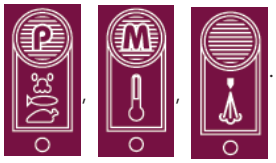
OFF

Push **Start/Stop (f)** in 5 seconds.
The following text appears in the display:

SELECT LANGUAGE
ENGLISH

Push **Enter (e)** button to confirm the selection.
The following text appears in the display:

CUSTOMER PARAMETER
ENTER PASSWORD

To write the password push buttons **(g), (h), (j)** in a row  .

Push **Enter (e)** button to confirm the selection.
The following text appears in the display:

CHANGE PASSWORD?
NO

Push **scroll (g)** or to choose alternatives NO(default) or YES:
Push **Enter (e)** button to confirm the selection.
If NO is chosen the following text will appears in the display:

CUSTOMER PARAMETER
INTERNAL PARAMETER

If YES is chosen following text appears in the display:

ENTER NEW PASSWORD

Enter the new password by pushing buttons **(g), (h), (j) and (k)** in chosen order.
Push **Enter (e)** button to confirm the selection.
The following text appears in the display:

CONFIRM NEW PASSWORD?

Enter the new password by pushing buttons **(g), (h), (j) and (k)** in chosen order.
Push **Enter (e)** button to confirm the selection.
The following text appears in the display:

PASSWORD CHANGED

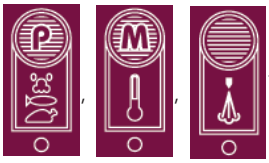
The password changes.
The following text appears in the display:

CUSTOMER PARAMETER
INTERNAL PARAMETER

Push **scroll (g)** or to choose alternatives:

1.4.2.1: INTERNAL PARAMETER
1.4.2.2: CUSTOMER PROGRAM.

1.4.2.1: INTERNAL PARAMETER

To write the password push buttons **(g), (h), (j)** in a row  .

Push **Enter (e)** to confirm the selection.

The following text appears in the display:

CUSTOMER PARAMETER INTERNAL PARAMETER

Push **Enter (e)** to confirm the selection.
The following text appears in the display:

SET CURRENT YEAR 2015

Push **scroll (g)** or to choose alternatives
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

SET CURRENT MONTH XX

Push **scroll (g)** or to choose alternatives
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

SET CURRENT DAY XX

Push **scroll (g)** or to choose alternatives
Push **Enter (e)** to confirm the selection.

The following text appears in the display:

SET DATE FORMATE YY-MM-DD

Push **scroll (g)** or to choose alternatives
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

SET TIME FORMATE 24:00

Push **scroll (g)** or to choose alternatives.
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

SET CURRENT TIME hh:mm

Push **select (b)** button to scroll between hour(hh) and minutes(mm)the selection.
Push **scroll (g)** or to increase or decrease the value.
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

TEMPERATURE SCALE °F

Push **scroll (g)** or to choose between °F for "Farenheit" or °C for "Centigrade" scales.

The following text appears in the display:

PRESS BUTTON BEEP YES

Push **scroll (g)** or to choose alternatives YES (default for have a beep qhen pushing buttons) or NO(no beep)
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

PC CONNECTION YES

Push **Enter (e)** to confirm the selection.
The following text appears in the display:

MULTI NETWORK 10 01

Push **Enter (e)** to confirm the selection.
The following text appears in the display:

PRINTER CONNECTION CUSTOM FT190S

Push **scroll (g)** or to choose alternatives NO or CUSTOM FT190S (default).
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

PRINTER BAUDRATE 1200/2400/4800/9600

Push **scroll (g)** or to choose alternatives.
Push **Enter (e)** to confirm the selection.

The following text appears in the display:

EVENTS INTERVAL 10 MIN

Push **scroll (g)** or to choose between 02 to 59 minutes.
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

PRINT DURING CYCLE YES

Push **scroll (g)** or to choose alternatives NO(default) or YES.
The following text appears in the display:

CUSTOMER PARAMETER INTERNAL PARAMETER

Push **scroll (g)** or to choose alternatives:
1.4.2.1: INTERNAL PARAMETER
1.4.2.2: CUSTOMER PROGRAM.

14.2.2: CUSTOMER PROGRAM

Push **Enter (e)** to confirm the selection.
The following text appears in the display:

Push **Enter (e)** to confirm the selection.
The following text appears in the display:

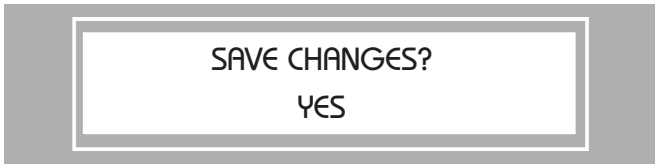
Push **scroll (g)** or to choose alternative letters.
Push **select (b)** to scroll between positions.
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

Push **scroll (g)** or to set the temerature.
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

Push **Enter (e)** to confirm the selection.
The following text appears in the display:

Push **Start/Stop (f)** anytime to save the changes.

The following text appears in the display:



Push **Enter (e)** to confirm the selection.

1.5 Calibration program:

There are possibilities to calibrate Tina's temperature probes in case of replacement of probes or failure in the temperature scales. To make sure that the calibration is correct use always a calibrated thermometer to compare with the values fore Tina probes.

The following text appears in the display:

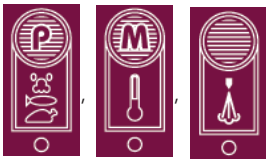
OFF

Push **Scroll (g)** buttons and simultaneously in 5 seconds.

The following text appears in the display:

CALIBRATION ENTER PASSWORD

To write the password push buttons **(g), (h), (j)**

in a row 

Push **Enter (e)** to confirm the selection.

The following text appears in the display:

CHOOSE TINA MODEL TINA 180

Push **scroll (g)** or to choose alternatives TINA 180 (default) or TINA 1200.

Push **Enter (e)** to confirm the selection.

The following text appears in the display:

SHOW PASSWORD NO

Push **scroll (g)** or to choose alternatives NO(default) or YES (If YES alternative is chosen the Service personal will be able to see the users password.

The following text appears in the display:

BRIGHTNESS XX%

Push **scroll (g)** or to choose alternatives 25, 50,75 or 100%:

Push **Enter (e)** to confirm the selection.

The following text appears in the display:

CALIBRATION FOOD PROBE

Push **Enter (e)** to confirm the selection.

The following text appears in the display:

FOOD PROBE -X.X

Push **scroll (g)** or to set the temerature (possible to adjust ±3.6°F(±2°C).

Push **Enter (e)** to confirm the selection.

The following text appears in the display:

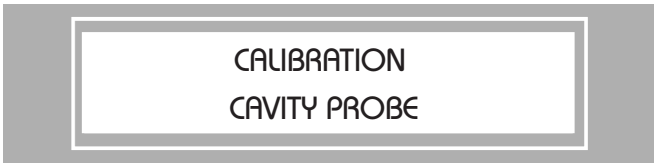
FOOD PROBE -X.X

Push **scroll (g)** or to choose alternative letters.

Push **select (b)** to scroll between positions.

The following text appears in the display:

Push **Enter (e)** to confirm the selection.
Push **scroll (g)** or to set the temerature (possible to adjust ±9°F(±5°C).
Push **Enter (e)** to confirm the selection.
The following text appears in the display:



Push **Enter (e)** to confirm the selection.
A buzzer confirms the changes.
Push **Start/Stop (f)**.
The following text appears in the display:

Choose alternative by using **scroll (g)** button or .
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

1.6 Loading default values:

There are possibilities to load the default values incase unsecurity of the values.
NOTE: If calibration of the temperature probes have been made before reloading the default program values, the calibration values will be remained.
The following text appears in the display:

OFF

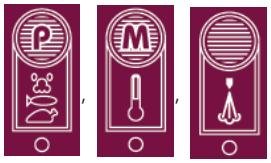
Push **Scroll (g)** button in 10 seconds.
The following text appears in the display:

LOAD CYCLE PARAMETER YES

Push **Enter (e)** to confirm the selection.
The following text appears in the display:

LOAD CYCLE PARAMETER ENTER PASSWORD

To write the password push buttons **(g), (h), (j)**

in a row 

The following text appears in the display:

LOAD CYCLE PARAMETER PROCEED?

Push **Enter (e)** to confirm the selection.

The program will reload the default values of the cycle parameters.
The following text appears in the display:

OFF

1.7 Print events memory:

Push and hold **select (b)** button to print the event memory.

1.8 Clear events memory:

Push **Scroll (c)** in 10 seconds.
The following text appears in the display:

CLEAR EVENTS MEMORY YES

Use **Scroll (c)** or to choose alternatives YES or NO.
Push **Enter (e)** to confirm the selection.
The following text appears in the display:

CLEAR EVENTS MEMORY PLEASE WAIT

OFF

Messages and Error codes

Messages	Cause	Action
STEAMGENERATOR CHECK SUPPLY	Water canceled Low water in the steam generator.	Check water supply and press START
STEAMGENERATOR FILLING ERROR	The time for drain and refill of the steam generator is too long.	Check to see if the powered ball valve is closed. Check the water supply.
FOOD PROBE SHORT CIRCUIT	Short circuit in the food probe, Tina cotinues working as refrigerator.	Replace and colibrate the food probe
FOOD PROBE BREAK	Short circuit in the food probe, Tina cotinues working as refrigerator.	Replace and colibrate the food probe
CAVITY PROBE SHORT CIRCUIT	Short circuit in the cavity probe, Tina cotinues working as freezer.	Replace and colibrate the food probe
CAVITY PROBE BREAK	Short circuit in the cavity probe, Tina cotinues working as freezer.	Replace and colibrate the food probe
FOOD TEMPERATURE THAWING: TO HIGH	Food temperature to high during the thawing.	Check to see if the food probe is in the right place.
TEMPERATURE CAVITY CLEANING: TO HIGH	Cavity temperature to high during the cleaning.	Can we do anything?
TO HIGH TEMPERATURE	Cavity temperature to high during the thawing/ refrigerator	Open the door.
STEAMGENERATOR DRAINING ERROR	The time for drain of the steam generator is too lång.	Check the valve.
FAILURE SUPPLY 16 :25 ZA H BC M	Current break, the display shows the time current was back and how long it lasted. The food temp. shows the highest temperature.	Press ENTER, back to normal process
	The key is turned to deliming?	Deliming

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